

WHAT IS CLAIMED IS:

1. A method of releasing a fuel additive into fuel, said method comprising the steps of:

providing a fuel filter containing a fuel additive, said fuel filter positioned between a source of fuel and an internal combustion engine;

5 contacting a portion of said fuel additive with a portion of said fuel to provide a fuel composition comprising fuel additive dissolved in said portion of said fuel; and

10 allowing said fuel composition to admix with said fuel.

2. The method of claim 1 wherein said fuel additive is coated with a hydrocarbon insoluble coating.

3. The method of claim 1 wherein said allowing includes positioning a diffusion control orifice between said fuel composition and said fuel.

4. The method of claim 1 wherein said allowing includes positioning at least one baffle plate between said fuel composition and said fuel.

5. The method of claim 1 wherein said allowing includes allowing said fuel composition to diffuse into said fuel when said fuel exhibits a temperature level within a predetermined temperature range.

6. The method of claim 1 wherein the fuel additive is combined with a matrix material in a fuel additive

composition, the fuel additive being distributed in the matrix material and being effective, when released into the fuel, to provide at least one benefit to the fuel.

7. The method of claim 6 wherein the matrix material is substantially insoluble in the fuel.

8. The method of claim 6 wherein the matrix material comprises a polymeric material.

9. The method of claim 6 wherein the fuel additive composition further comprises a coating material surrounding at least a portion of the additive component and the matrix component.

10. The method of claim 9 wherein the coating material is present in an amount effective to reduce the rate of release of the additive component into the fuel relative to an identical fuel additive composition without the coating material.

11. The method of claim 9 wherein the coating material is substantially fuel insoluble.

12. A method of releasing a fuel additive into fuel, said method comprising the steps of:

providing a fuel additive composition comprising:
a matrix material and an additive component, the
additive component being located in the matrix material and
effective, when released into a fuel, to provide at least
one benefit to the fuel, and the matrix material being (1)
substantially insoluble in the fuel and (2) effective to

10 reduce the rate of release of the additive component into the fuel relative to an identical composition without the matrix material; and

contacting the fuel additive composition and fuel at conditions effective to release additive component from the fuel additive composition into the fuel.

13. The method of claim 12 wherein the matrix materials comprises at least one polymeric material.

14. The method of claim 12 wherein the fuel is a liquid.

15. The method of claim 12 wherein the fuel is a diesel fuel.

16. The method of claim 12 wherein the matrix material is initially in a form selected from the group consisting of a solid, a gel or a paste in the fuel additive composition.

17. The method of claim 12 wherein the matrix material has a melting point of at least about 82°C.

18. The method of claim 12 wherein the matrix material comprises more than one polymeric material.

19. The method of claim 13 wherein the polymeric material includes polymer repeating units derived from an olefin component having 2 to about 12 carbon atoms per molecule.

20. The method of claim 13 wherein the polymeric material comprises a polymer of ethylene.

21. The method of claim 13 wherein the polymeric material comprises a copolymer of ethylene and vinyl acetate.

22. The method of claim 13 wherein the polymeric material comprises a copolymer of ethylene and butylene.

23. The method of claim 13 wherein the polymeric material is at least partially oxidized.

24. The method of claim 13 wherein the polymeric material is an oxidized polyethylene wax.

25. The method of claim 13 wherein the polymeric material is an oxidized polypropylene wax.

26. The method of claim 12 wherein the matrix material includes an aliphatic acid component.

27. The method of claim 26 wherein the aliphatic acid component includes aliphatic acid molecules having about 28 to about 36 carbon atoms.

28. The method of claim 26 wherein the aliphatic acid component includes a montanic acid.

29. The method of claim 26 wherein the aliphatic acid component has a melting point of at least about 80° C.

30. The method of claim 12 wherein the fuel additive composition has more than one layer, each layer comprises a different mixture of the additive component and the matrix material.

31. The method of claim 12 wherein the fuel additive composition further comprises a coating material surrounding at least a portion of the additive component and the matrix material, the coating material being present in an amount effective to reduce the rate of release of the additive component into the fuel relative to an identical additive composition without the coating material.

32. The method of claim 31 wherein the coating material is the polymeric material.

33. The method of claim 32 wherein the polymeric material is polyethylene vinyl acetate.

34. The method of claim 31 wherein the matrix material has a different composition than the coating material.

35. The method of claim 31 wherein the matrix material has the same composition as the coating material.

36. The method of claim 31 wherein at least one of the matrix material and the coating material has a melting point of at least about 82°C.

37. The method of claim 31 wherein the matrix material is initially a liquid in the composition.

38. The method of claim 12 wherein the fuel additive composition further comprises a release enhancer component in an amount effective to increase the release rate of the additive component from the fuel additive composition 5 relative to an identical composition without the release enhancer.

39. The method of claim 38 wherein the release enhancer component is selected from the group consisting of a wicking materials, surfactants and mixtures thereof.

40. The method of claim 11 wherein the fuel additive composition further comprises a reinforcement component in an amount effective to increase the structural strength of the fuel additive composition relative to an identical fuel additive composition without the reinforcement component. 5

41. The method of claim 40 where the reinforcement component is selected from the group consisting of cotton, polypropylene and fiberglass fibers.